



FALL MEETING

Washington, D.C. | 10-14 Dec 2018

IN51C-0592: NASA Earth eXchange (NEX) App Store

Friday, 14 December 2018

08:00 - 12:20

📍 *Walter E Washington Convention Center - Hall A-C (Poster Hall)*

NASA Earth Exchange (NEX), and her public cloud version OpenNEX, have become platforms supporting scientific collaboration, knowledge sharing and research for the entire Earth science community. To date, a number of custom tools and capabilities have been integrated into the platforms. However, such integration has to undergo a case-by-case manual process thus lacks scalability. This timely project builds an App Store onto OpenNEX as a building block. Climate data analytics tools/programs can be easily uploaded, shared, organized, searched, and recommended like photos and videos on the YouTube.

The foundation of our App Store is a provenance server, which not only records metadata but also execution history of climate data analytics apps including the input data and parameters, output data and products, who runs the app for which purpose, and how apps may be chained into workflows. Researchers can thus understand, reproduce, and repurpose existing apps and workflows. Machine learning approaches are applied to mine provenance to provide recommend-as-you-go services for Earth scientists, such as to recommend suitable apps and workflow snippets. A browser-based workflow tool is also provided for researchers to explore the provenance server and design value-added workflows. Scalability, sustainability, extensibility, usability, adaptability, security and privacy are considered in the App Store.

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